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COMMENTS BY CORNELL-DUBILIER ELECTRONICS
CORPORATION ON THE DRAFT NEW BEDFORD REMEDIAL
ACTION MASTER PLAN, DATED JANUARY 24, 1983

Submitted

March 14, 1983

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I. INTRODUCTION

Cornell-Dubilier Electronics Corporation ("CDE") submits the following comments on the draft "New Bedford Remedial Action Master Plan", dated January 24, 1983 (the "RAMP"), prepared for the United States Environmental Protection Agency ("EPA").

These comments are intended to serve two purposes:

First, they are designed to assist EPA in developing a RAMP to best serve the needs of the New Bedford community. The RAMP is the basic planning document for addressing the issues raised by the presence of PCBs in New Bedford Harbor, a situation of real concern to the New Bedford community. This would, of course, include CDE, a long-established and important member of that community both as a major employer and as a concerned corporate citizen.

Second, the comments are designed to state candidly, and for the record, CDE's concerns about the inadequacies of the RAMP.

The comments address those issues which now appear to be of greatest import and are presented in two parts. First, general

observations about the RAMP as a whole are presented and are then followed by specific comments covering individual sections of the RAMP.

II. GENERAL OBSERVATIONS

A. Overly Broad Scope of the RAMP

CDE's major concern with the RAMP is its overly broad, unfocused scope. This problem manifests itself in a number of ways, all of which serve to weaken the effectiveness of the RAMP.

1. Inadequate Definition of Risks

The unfocused nature of the RAMP finds its genesis in the inadequate definition of the risks to New Bedford residents and the environment. The Hazard Assessment which was prepared by EPA and served as the basis for inclusion of the Harbor on EPA's National Priority List did little to define the actual risks to public health and the environment posed by the presence of PCBs in New Bedford Harbor. The Hazard Assessment accepted previous work relating to the Harbor without verifying the accuracy of such work, overstated the extent of the problem and assumed, without providing any evidence, high exposure to PCBs. Thus, the Assessment's risk analysis may not only constitute an inadequate

legal basis for inclusion of the Harbor on the National Priority List, but it may also create misimpressions concerning what remedial actions are appropriate in this situation.

Furthermore, the RAMP does not clearly define the risks which are present or even propose studies to do so. It does not state or establish criteria for determining what PCB levels constitute a risk to public health or the environment, what the causes and nature of that risk are, or where such a risk is posed in the New Bedford area. Instead, it contains vague, general statements about the levels of PCBs in the Harbor, the City sewer system and the City landfill. It is well known that PCBs are ubiquitous, having even been found in the polar ice caps. Moreover, the concentrations of PCBs which have been reported in New Bedford Harbor appear to be far less than in other locations within the United States, including the Hudson River and parts of the Great Lakes.^{/1/}

In addition, there are still serious questions as to whether PCBs actually pose a significant risk to human health, and if they do, at what concentration levels and under what conditions. EPA has recognized that the presence of PCBs is not per se a problem and has set certain de minimus levels below which it will not regulate PCBs. For example, EPA does not regulate the disposal of wastes containing 50 parts per million ("ppm") or

/1/ See statement prepared by Robert B. Davis, New Bedford Planning Department, August, 1982, included as Appendix II to the Acushnet River Estuary PCB Commission Status Report, September 1982.

less of PCBs. In this regard, CDE is not aware of a single documented case of human disease attributable to contamination of the food chain in the United States.

Without clear definitions of the risks posed to public health and the environment by different concentrations of PCBs and the nature of the threat, if any, actually facing people living and working in New Bedford, it is impossible for the community to know what it is up against and to determine what remedial measures should be carried out.

2. Excessively Broad Geographical Scope

Because the RAMP does not clearly define the PCB levels and circumstances which constitute a threat to public health or the environment, it has no mechanism for focusing attention on those areas which may actually be posing a risk. Instead, the RAMP seeks to study an unknown number of locations in the vicinity of New Bedford and to investigate a wide range of materials in addition to PCBs. It thus seeks to broaden the scope of remedial activities beyond the Harbor and beyond PCBs without specifying that those other areas or substances (or the impacts associated with them) now endanger public health or the environment or can reasonably be expected to do so.

Unfortunately, the RAMP seems to advocate an indiscriminating, open-ended and very expensive (over \$3 million) area-wide

study program. Such an approach is time-consuming and may diffuse the attention and resources available to help the New Bedford community to the point of ineffectiveness. By attempting to do everything in the beginning it may accomplish nothing more in the end than the collection of more reports. Indeed, the resources available may prove to be insufficient to effectively address the Harbor situation, much less all areas where PCBs may be found.

Furthermore, the law does not permit such an open-ended approach. Section 105 of Superfund requires the President to prepare criteria for determining priorities among sites with actual or threatened releases of hazardous materials and to publish a list of those sites which are of the highest national priority for remedial action. Only those sites which are on this National Priority List are candidates for remedial action under section 300.68 of the National Contingency Plan ("NCP"), the provision under which the RAMP was issued. According to the site description EPA issued at the time of its inclusion of the site on the National Priority List, only the New Bedford Harbor is on the List. Thus, only the Harbor may be the object of remedial action. Moreover, focusing on the Harbor is mandated by section 104(c)(4) of Superfund which requires that, in order for a remedial action to be taken, the danger to the public health, welfare or the environment posed by the site must outweigh the need to use the Fund's limited resources to respond to other sites posing greater dangers.

Finally, the RAMP does not indicate that authorities other than Superfund may be available and more appropriate for addressing problems outside of the Harbor. For example, any concerns raised by PCBs in the New Bedford Municipal Wastewater Treatment Works are being addressed as city, state and federal agencies go forward with the planning and construction of the improvements to that system under the federal Clean Water Act. These improvements will include the installation of secondary treatment capability, whose effects should include a reduction in the discharge of PCBs from the treatment works.

Accordingly, the RAMP should be focused upon the presence of PCBs in New Bedford Harbor to ensure that it: (a) represents an effective approach to the most pressing concerns about the presence of PCBs in New Bedford; (b) is consistent with the requirements of Superfund and the NCP; and (c) utilizes available resources in the most cost-effective manner.

3. Unnecessarily Broad Plan of Studies

Because the RAMP does not specify the nature of the risks actually presented, it is difficult to assess the adequacy of the existing data base and determine what additional studies are necessary. As noted in the discussion of geographical scope, the RAMP proposes an area-wide, time-consuming and expensive program of study. Many of the studies proposed are not linked to the main

focus of concern, the Harbor, but are aimed at areas of secondary concern at best. This is not a cost-effective way to identify what additional information is needed to devise and implement a remedial program.

The existing data base should be examined to ascertain any actual, or reasonably to be expected, significant threats to public health or the environment. Important gaps in existing data can then be identified and studies designed to fill those specific gaps. This should help to avoid studies on questions of secondary importance and thereby focus remedial efforts on areas of real concern. Furthermore, by concentrating on those studies which are both practically and legally required, more timely action can be taken.

B. Premature "Fast-Track" Activities

The RAMP attempts to expedite action by proposing "fast track" study and remediation (presumably dredging) in New Bedford's Inner Harbor. Although it may seem appealing to avoid delay, this tactic is contrary to both common sense and the law. Such an approach puts the cart before the horse, with feasibility and engineering studies being carried out and the remedial alternative implemented before even preliminary assessments have been made of the benefits or damage resulting from such action.

The actions contemplated by the RAMP to address the presence of PCBs in the Inner Harbor would cost millions of dollars and raise serious questions about the capacity of available resources to pay for them. In addition, they might seriously disrupt the community's environment, its ability to function and its economy. This is especially true where the remedial action contemplated is dredging; which could result in the resuspension of PCBs and silt in the water column and could pose both environmental and economic problems associated with transportation, storage and disposal of the contaminated dredge spoils. Therefore, before any such remedial alternative is chosen and before there can be an answer to such questions as whether to dredge, and if so, where to dredge and where to put the dredge spoils, the potential risks and benefits to public health and welfare of such a remedial alternative must be assessed.

Such an assessment has several components. First, it requires a clear identification of the potential benefits to be gained. Second, less expensive and less environmentally disruptive alternative remedial actions such as matting, natural capping and resource management need to be fully considered before the benefits of dredging can be assessed.

Moreover, historical trends in the data should be considered. Although not mentioned in the RAMP, some PCB levels in the Harbor and the biota appear to be dropping. Similar situations in other aquatic environments should also be

considered. Such cases have indicated that natural processes like sedimentation may eliminate the need for any remedial action.

For example, exhaustive studies were undertaken to determine how to deal with extensive contamination of the James River by the highly toxic pesticide, Kepone. The course of action which was chosen as a result of these studies was to rely on natural sedimentation and abstain from any dredging.

The RAMP, however, anticipates that the pathways and the major feasibility studies will not be completed until one and one-half years after the "fast-track" remedial action is implemented. Indeed, not even a rough benefits assessment will be available until six months after the commencement of remedial activity. In addition, the RAMP does not include the health studies as an integral part of its program.

The proposed "fast track" would also violate the law. This would preclude use of Superfund money. Section 104(a) of Superfund requires that remedial actions be undertaken in a manner consistent with the NCP. The "fast track" activities proposed in the RAMP are labelled an "initial remedial measure" under the NCP, and section 300.68 (c)(1) of the NCP provides that such measures are appropriate only where it has been determined that they are feasible, necessary to limit exposure, and cost-effective.

The RAMP does not contain adequate provisions for making these determinations until after the "fast-track" actions have been completed. In addition, initial remedial measures can only be undertaken where requested by the governor of the state and where assurances have been received from the state that it will bear its required share of the costs, in this case 50%. The RAMP does not address these requirements. Most importantly, initial remedial measures under the NCP are temporary, stop-gap measures such as signs, fences and dikes, not multi-million dollar cleanups like the "fast-track" remedial action contemplated in the RAMP. The NCP treats such large-scale, permanent measures in separate categories denoted as "source control" or "off-site" remedial actions and requires that the full range of activities necessary to determine their effectiveness be completed before action is taken.

Accordingly, the "fast-track" provisions of the RAMP are improper. The prudent, legally sanctioned approach would be to focus the RAMP on the area of real concern, which is the Harbor. The RAMP can then provide for an orderly and expeditious identification of the scope and extent of any real problems caused by the presence of PCBs and weigh the best solution to that problem.

C. Indeterminant Nomenclature

The RAMP uses a great variety of terms to designate areas in and around New Bedford Harbor, including "estuary", "upper

estuary", "Acushnet River", "New Bedford Harbor" and "Buzzards Bay". It will contribute greatly to understanding the RAMP and to its evaluation and implementation if defined terms in common use are employed. For example, it would be helpful to refer to the area inside the hurricane dike as "Area 1" or the "Inner Harbor" and to the Harbor area outside the hurricane dike as "Areas 2 and 3" or the "Outer Harbor". The term "Buzzards Bay" properly should be restricted to the areas beyond the Outer Harbor. Those terms are so utilized in these comments.

III. COMMENTS ON PARTICULAR SECTIONS

A. RAMP

1. Section 1.2

It is stated in the first paragraph on page 2 of the RAMP that New Bedford is "one of the most extensive ... cases" of PCB "contamination". This statement must be put in perspective. Greater concentrations of PCBs are present in other areas of the United States. As described in the statement to the Achusnet River Estuary Commission by Robert B. Davis, of the New Bedford Planning Department, cited in footnote 1 on page 4, above, parts of the Hudson River, the New York Bight, and the Great Lakes exhibit PCB levels in sediments, the water column and edible species greater than those found in New Bedford Harbor.

Moreover, there are still serious questions about the "actual degree of risk to human health which PCBs represent". Neither the RAMP nor the Hazard Assessment identify the specific nature and extent of the danger to the health of New Bedford residents or the Harbor environment posed by PCBs. The Hazard Assessment relies on general statements about such threats and upon general citations to various studies in concluding that the the Harbor warrants action under Superfund. This raises serious technical and legal questions. Unless such threats to health and the environment are identified, the RAMP cannot help to define the objectives of any actions which should be taken.

The second paragraph also expresses concern about the "uncontrolled presence" of PCBs in the environment. It should be remembered that the presence of PCBs must be coupled with a potential for exposure. Exposure is, in turn, dependent upon the quantities involved and their accessibility. Both of these factors must be considered when assessing any remedial alternatives. In addition, a third and very important factor which must be assessed is the toxicity of PCBs.

In this section of the RAMP it is also stated that other chlorinated hydrocarbons may be associated with these components. However, no evidence is provided to support this statement in general or, more importantly, with regard to New Bedford Harbor in particular.

With reference to the statement at the end of the first paragraph on page 2 that the EPA banned "all further PCB production in 1977", it should be noted that the ban is not total, as it allows exemptions for many uses of PCBs, and EPA permitted production of PCBs until July 1979. It should also be noted that the ban was in large part a response to the widespread distribution and persistence of PCBs in the environment and the concerns that this raised for any health effects which might be associated with these compounds, rather than a conclusive finding of such effects.

Another question raised in this section of the RAMP relates to heavy metals. There is no evidence that CDE was ever associated with the discharge of any significant amounts of such metals. In addition, the study upon which this discussion apparently is based concerned heavy metals emanating solely from the Inner Harbor.

In the third paragraph on page two of the RAMP it is stated that "all" PCB contamination in the New Bedford area is the result of "industrial uses of PCBs". The actual causes of the PCB contamination are less well known than this statement suggests. In addition to any industrial discharges, PCBs may have also been introduced into the area from utility discharges, pesticide deposition, the chlorination of biphenyls during the operation of publicly-owned sewage treatment plants, and bottom paint on boats. Another mode of introduction is from dredge and

fill operations conducted by the Army Corps of Engineers on sediments containing previously deposited and buried PCBs.

The third paragraph also notes that CDE is "presently involved in the cleanup of PCB contamination" on its property. That cleanup was completed by CDE in December 1982.

At the top of page four of the RAMP there is a list of several sites in addition to the Harbor where PCBs have been found. It should be remembered that the RAMP is supposed to focus on the highest levels of PCBs and the area of highest local concern as set forth in the NCP. This is New Bedford Harbor.

In the first full paragraph on page four of the RAMP it is stated that there are, in addition to the listed sources, "more than thirty other potential or suspected locations of PCB contamination in the general area encompassing New Bedford, Fairhaven, Dartmouth, and Acushnet". The purpose of this statement should be clarified. If the RAMP intends to bring all these potential sources into the remedial program, there is serious doubt whether any substantive remedial action will take place or whether any such action would be legally permissible under Superfund.

This same comment applies to the discussion of heavy metals in the second full paragraph on page four, where it is stated that concentrations of heavy metals are "elevated" but not by

what amounts. It is also unclear why they are considered to be a major concern when they were not addressed in the Superfund hazard ranking for this site. Almost any industrial harbor will have "elevated" concentrations of heavy metals, and, with the limited funds available for use in New Bedford, it is difficult to understand why heavy metals must be studied at this time.

In the final paragraph in section 1.2 it is stated that "Buzzards Bay" has been closed to the taking of certain "commercially important fish," and a suggestion is made that "free-swimming species" are involved. Not only was Buzzards Bay not closed, but only Areas 2 and 3 of the Outer New Bedford Harbor were closed due to PCB contamination. The Inner Harbor (Area 1) was closed many years ago due to coliform contamination. Furthermore, the one "commercially important" species which has been affected is the lobster.

Another statement contained in the final paragraph is that the PCB "hot spots" in the upper area of the Acushnet River Estuary will be "the focus of initial remedial measures over the next 6-12 months". As discussed earlier, "initial remedial measures" are governed by section 300.68 of the NCP, which requires that certain determinations be made and certain commitments be received from the state in order to undertake such measures. The RAMP assumes that all these requirements have been met without making adequate provisions for doing so. The RAMP also assumes that the costly dredging program now anticipated

constitutes an "initial remedial measure," an assumption which is not legally correct under the NCP.

2. Section 1.3

The RAMP states that the "broad objectives of the New Bedford remedial action program" are four-fold: (a) to protect the health and welfare of the public; (b) to enable the return of commercial fishing; (c) to allow for execution of previously proposed projects in the Harbor; and (d) to restore the recreational potential of the Harbor. Because the RAMP is to be the organizing tool for efforts in this area, its principles and objectives should be clearly stated and well-defined.

For example, the desired effect of any remedial action on public health and welfare should be clearly defined. In order to do so, the risks to public health posed by the contamination must also be clearly defined. However, the RAMP does not include health studies as an integral part of its proposed program. Instead, these studies are placed on a separate track and may not be available when they are needed to assess actions under the RAMP.

One hoped-for outcome of any remedial action is, of course, the reopening of the Outer New Bedford Harbor to commercial lobstering. It should be remembered, however, that reduction of PCB contamination will do nothing to abate the coliform pollution

which has long kept the Inner Harbor closed to commercial fishing. In addition, there is evidence that PCB levels in Outer Harbor lobsters are decreasing to levels below 5 ppm and that natural processes together with resource management (e.g., redefinition of closure lines and seasonal reopening) could be effective.

As for proposed development projects, it is necessary to determine how any such projects are affected by the PCB problem. In the principal case to date, a proposed bridge to Fairhaven, the PCB issue was addressed and the project is moving forward.

With regard to the Harbor's recreational potential, it is necessary to specify how that potential has been affected by PCB contamination. In the Outer Harbor, it is still possible to swim and boat and the level of PCBs found in finfish is below that designated as unsafe by the Food and Drug Administration. Area 1 (the Inner Harbor) was closed to swimming and fishing because of high coliform levels, a problem which existed before the PCB contamination and which, again, the RAMP does not and cannot address. It should also be noted that, although restoration of recreational potential may be a desirable result, given the limited resources available, there is some question whether it can or should be a major focus of the RAMP.

3. Section 1.4

Page five of the RAMP describes the planned "fast-track" evaluation and remediation of the PCB "hot spots". As discussed

before, the "fast-track" approach, especially if it should consist of dredging, may prove to be ineffective and detrimental to the environment and to public health, as well as more expensive. Thus, such an approach should be supported by a thorough analysis of its impacts and potential benefits. Such studies should cover both environmental matters and public health concerns relating to the hot spots themselves and to any proposed dredging plans. However, the RAMP does not contemplate finishing such studies until too late, well after the "fast track" remediation is to be implemented.

4. Section 1.4.1

Since the RAMP is to serve as the "basic planning tool for conducting all remedial activities" it is imperative that its scope and objectives be clearly defined and that it describe an achievable goal. The current proposal calls for wide-ranging studies to determine if there may be a problem at a multitude of sites. This approach does not meet the criteria of the NCP. In addition, the RAMP does not expressly provide for using the results of the proposed studies to screen the sites at which remedial action may be necessary.

5. Section 1.4.3

The proposed "fast-track" measures cannot meet the need for studies on health and environmental effects and other items.

These studies will not even be substantially completed by the time the "fast-track" program is to be finished.

6. Sections 1.4.4 and 1.4.5

Both of these sections presume that significant remedial actions are to be taken under Superfund. This is a presumption that the law does not permit. Superfund requires that all remedial actions be cost-effective, and the NCP specifically includes "no-action" (e.g., utilization of natural processes and resource management) as an alternative to be considered where a particular type of response may cause a greater environmental or health danger or be less cost-effective. This is especially true where dredging of PCB hot spots is being considered. Such dredging could stir up the sediments, resuspend the PCBs, and destroy certain biota such as clam-beds, as well as raise the thorny issue of where to place the contaminated spoils.

7. Section 1.4.7

As the RAMP notes, it is important to communicate with the public throughout the remedial process. When important questions of public health and welfare are at stake and any actions taken may have far-reaching consequences, the need for precise and accurate information is underscored. This argues against vague, unmeasured references to as yet unidentified sources of PCB contamination.

8. Section 1.4.8

It is stated in the RAMP that health effects and epidemiological studies "may" be pursued parallel to remedial activities. It is difficult, if not impossible, however, to determine what risks are posed by the presence of PCBs and, hence, what remedial actions may be appropriate, unless the health effects, if any, associated with PCBs in New Bedford are known. PCBs have been present in New Bedford Harbor for over 40 years, beyond the expected latency period for any PCB-related illnesses. In addition, the population of New Bedford may be relatively stable. As a result, it may be possible to ascertain from health studies whether the population of New Bedford has experienced any detrimental health effects from PCBs and by what means. Such information is crucial to the development of remedial activities.

9. Section 1.4.9

The RAMP should not be read to imply that CDE is a "responsible party" against whom enforcement action under Superfund would be appropriate. CDE's only release to the Harbor is federally permitted and insignificant, and CDE has never owned the Harbor or contracted for disposal in it. Furthermore, as explained in these comments, the actions and expenditures contemplated by the RAMP are inconsistent in many ways with the NCP and, therefore, could not be a basis for imposing Superfund liability on any party.

10. Section 1.5

"Zones of contamination in the New Bedford area" do not comprise a site on the National Priority List. New Bedford Harbor is the site that has been determined to constitute a national priority.

In the second paragraph on page nine of the RAMP, it is noted that the states are to bear a portion of the costs of remedial action programs. Since New Bedford Harbor, as well as the city landfill and sewer system, is a publicly-owned site, the state is required to bear 50% of the costs of any remedial action. In addition, it should be remembered that the state is responsible for providing a site for the disposal of soil or dredge spoils containing PCBs. The RAMP does not raise or address the fact that there are no facilities in Massachusetts capable of accepting such material and that there may not be any facilities available to handle the volumes of material being discussed in connection with the dredging of the Harbor.

In addition, the list of existing committees given in this section does not include a citizens advisory committee to provide focused community input to the regulatory agencies charged with implementing the RAMP. Such committees have functioned helpfully elsewhere. If one is to be formed here, it should be properly constituted and balanced and given specific responsibilities

(e.g., to assess the availability and suitability of dredge spoil disposal sites).

11. Section 2.1

The first paragraph on page 12 of the RAMP lists "various sources and sites of PCB contamination in the New Bedford area". As noted previously, the site which the RAMP is supposed to consider is the Harbor. References to "undisclosed sources and sites" does not further a responsible discussion of the situation. It should also be noted that CDE has completed all containment measures required at its property.

In the second paragraph on page 12 of the RAMP, some of the studies that have been done on PCB contamination in the New Bedford area are mentioned, as are some of the problems with those studies. Many of these studies appear to be dated or contain mischaracterizations of fact. As a result, care should be taken in relying upon the information which they contain as a basis for carrying out remedial measures. Unfortunately, the RAMP seems to paraphrase or report findings from these studies without critical analysis.

12. Section 2.2

In the first paragraph on page 13 it is stated that "all available analytical data" relating to PCB contamination in New

Bedford has been placed in a computerized data management system. It should be noted, however, that these data are taken from many of the same studies which were criticized on page 12 of the RAMP. As such, the data are subject to the same problems which were noted about some of those studies, namely, mischaracterizations of fact and results which are dated.

In addition, the "criteria" forming the basis of the "data screening process" which are mentioned in the third paragraph on page 13 are not described in the RAMP. Therefore, no basis for confirming their utility is provided.

13. Section 2.3.1

The first sentence in section 2.3.1 on page 14 states that "PCBs are present throughout the bottom sediments of the Acushnet River Estuary". The available data do not support the conclusion that PCBs are present "throughout" the bottom sediment because no thorough grid sampling has been done. In addition, the term "Acushnet River Estuary" is not defined and it is unclear what area is covered.

In the third paragraph on page 14 it is stated that most of the PCBs are found "in the upper six inches" of the sediment. It should be noted, however, that there are data which show that many of the PCBs are located in the bottom portion of the "upper six inches". Such data suggests that the sedimentation process

may be placing a natural cap over some of the sediments containing PCBs. This possibility should be carefully evaluated before any dredging of "hot-spots" is contemplated.

In that same paragraph, it is intimated that PCBs accumulate most readily in the deeper portions of the harbor. The existing data, however, would not appear to support such conclusion, as the documented PCB concentrations are much higher in the shallower Inner Harbor.

Paragraph four on page 14 contains a reference to Figures 2-1a and 2-1b, which are intended to "show the distribution of PCBs" in the bottom sediments of the Harbor. This method of presenting the sediment concentration data does not allow for a discussion of when these values were obtained or the trend of PCB concentrations over time. The actual historical trend has been one of decreasing concentrations of PCBs in the sediment, suggesting that natural processes may serve as an effective solution to the problem.

In the last paragraph on page 14, it is stated that PCB concentrations in the range of 50-100 ppm occur along the shoreline north of the CDE plant. The source of these values is not specified, however, and the values conflict with those obtained by the Department of Environmental Quality Engineering ("DEQE") in the same area. The values reported by the DEQE from its July

and October, 1981, sampling efforts were in the range of 3-30 ppm. The same is true of the values near the Clark's Point treatment plant outfall (which ranged from 4-46 ppm).

In the first paragraph on page 17, it is noted that data collected before 1980 were not included in the Figures. These data should be reflected somewhere in the RAMP in order to accurately reflect the decreasing concentrations of PCBs being observed in the sediment over time.

In the same paragraph, it is suggested that analyses for the Aroclor 1242 PCB isomer may understate the level of PCBs "several fold". The basis of this conclusion is unclear, however, since the 1242 analysis is used as a standard because it picks up most Aroclors. As a result, 1242 results should be quite accurate rather than severely understated.

The discussion of the metals data in paragraphs two, three and four on page 17 is somewhat confusing. The data against which Summerhayes' work are compared are not identified, and there is no indication of how the discussion relates to what is happening to PCBs in the Harbor. If it is intended to show the pattern of dispersal of the metals, then this should be stated. For example, Summerhayes' work suggests that some of the copper has migrated from the high concentration areas in the Inner Harbor to areas of the Harbor outside the dike. To the extent copper and PCBs exhibit the same dispersal characteristics, this

may imply that PCB levels outside the dike are attributable in substantial part to Inner Harbor discharges.

In the fifth paragraph on page 17 it is stated that PCB levels in the New Bedford Harbor water column are "in the range of 1 part per billion" ("ppb"). This statement could be misunderstood because no indication is provided of the basis for the value chosen or what the value represents. Does it refer to dissolved PCBs or those in suspended sediments? Is it a 24 hour average, an average value, or a value covering a particular location in the Harbor? It would also be helpful if the purpose of the EPA salt water criterion were explained.

In the final paragraph on page 17, the efforts at monitoring PCB levels in fish are noted, and it is stated that "PCB levels in bottom feeders correlate generally with the degree of sediment contamination". However, fish monitoring efforts in the Harbor to date have been sparse compared, for example, to the James River, the Hudson River and the Great lakes. Moreover, PCB levels have varied with the mobility of the fish sampled, with free-swimming fish not being significantly affected.

In addition, the "correlation" statement could be misleading. Figure 2-1b suggests that PCB contamination of the sediment is highest inside the dike, drops off as one passes through Area 2 and increases somewhat near the border between Areas 2 and 3. The available data on PCB levels in lobsters, however, indicate

that PCB levels are the highest in lobsters found near the dike and generally decrease as one moves further out into the Harbor. This may suggest that the PCB levels in the lobsters may be most affected by transport of PCBs from the Inner to the Outer Harbor.

In the first paragraph on page 18, it is stated that lobster and finfish samples "have revealed PCB levels exceeding the 5 ppm (wet weight) federal action level". Further information is needed to complete this summary. Reference should be made to the substantial decrease over time of the levels of PCBs that have been found in lobsters and finfish. Indeed, the levels of PCBs now found in finfish are so low they are not considered to pose a problem. It should also be noted that the mean level of PCBs now found in lobsters in Area 3 is under 5 ppm and that the range of PCB levels found in Area 3 lobsters is under 5 ppm much of the year.

Reference is also made to "depuration" which may have occurred in some species. However, decreases in the PCB levels in fish in the Harbor over several years seem more likely to have been caused by decreased exposure to PCBs, not "depuration", which connotes the operation of a self-cleansing process in a particular organism. This distinction is important to a proper assessment of the causes of and cost-effective remedies for any problems which may be created by the presence of PCBs in the Harbor.

Finally, while the "seasonal migration of lobsters" may create some problems in interpreting the lobster data, it may also explain the seasonal patterns in lobster PCB levels which have been observed (e.g., more contaminated lobsters from the Inner Harbor might migrate to the Outer Harbor during the summer months as water temperatures increase). It may also suggest that preventing the migration of lobsters into or out of sections of the Harbor would be an appropriate part of any remedial action. A similar approach was utilized as a means for addressing DDT contamination of fish in Huntsville, Alabama.

The first sentence of paragraph four on page 18 states that the "most pressing information need is a more complete delineation of PCB hot spots" in order to identify the area "requiring fast-track remediation". This begs the question. The most pressing information needs are: (a) a determination of the nature and extent of the threats to public health and the environment posed by the PCB contamination of the Harbor; (b) identification of the natural processes, such as sedimentation, now at work to reduce those threats; and (c) analysis of the possible benefits to be gained by dredging and other alternatives in light of the environmental, economic and regulatory problems raised by each alternative.

Filling these informational needs is necessary before any "fast-track remediation" is appropriate. Thus, the contaminants transport model referred to in the last paragraph on page 18 is

more critical to the proposed fast-track activities than it is to "remedial measures in the less contaminated areas".

The first paragraph on page 19 correctly states the objective of remedial action, namely, "to attenuate the release of contaminants to a level which is consistent with public health and safety". In order to meet this objective, however, it is necessary that the present risks to public health and safety be determined. In addition, containing the release of undefined "contaminants" should not be the objective. Rather, the objective should be to prevent the release of PCBs at levels and in circumstances which endanger the public health or the environment.

That same paragraph briefly lists other objectives of remedial action. As discussed previously, they raise several issues which should be noted: (a) only lobster fishing is affected by the closure of Areas 2 and 3; (b) Area 1 was closed to fishing due to the coliform problem which the RAMP does not and cannot address; (c) there is no discussion in the RAMP of how the ecosystem or the recreational potential of the Harbor is hurt by the PCB contamination; and (d) there is no explanation of how PCBs are a barrier to Harbor development.

14. Section 2.3.2

In the third paragraph on page 19 it is stated that the New Bedford municipal landfill "received an estimated 500,000 pounds

of solid PCB wastes from 1971-1975". The basis of this 500,000 pounds figure is not identified. Moreover, most of this weight likely would not have consisted of PCBs, but rather of the associated waste. In order to determine what amounts of PCBs are included, the PCB concentration level in the waste would have to be known, a figure which is not available.

The fourth paragraph on page 19 contains a summary of the available data on the landfill and demonstrates why the landfill is not an appropriate focus of remedial action under Superfund. Not only would it draw resources and efforts away from the more pressing concerns of the Harbor, but it would do so without any demonstration that PCBs are being released in any substantial amount from the landfill. All the actual test data discussed in paragraph four show that there is no problem with respect to PCB releases from the landfill into the air, surface water, or groundwater. Furthermore, the RAMP does not acknowledge: (a) the natural cap which already exists over the PCB-bearing wastes; (b) the fact that PCBs do not migrate readily, especially not through the wetlands peat found on the landfill site; and (c) that in any closure procedures already contemplated for the landfill, non-PCB leachate is likely to be of far greater concern than PCBs.

In the second paragraph on page 20, the conclusion is reached that the information available on the landfill "is mostly outdated and consequently of little value". This conclusion is

indicative of a major problem inherent in the RAMP, where benign data are discounted as outdated and recommendations are made for large-scale studies of secondary problems which are both expensive and time-consuming. Moreover, this approach is taken even though the existing data confirm expectations based on substantial experience with PCBs elsewhere.

In the second paragraph on page 21, the principal objectives of the landfill studies are said to be the "protection of groundwater and surface water resources" and the return of the landfill site "to productive use". These objectives do not appear to meet any real needs. There is no evidence that PCBs contained in the landfill will adversely impact drinking water, groundwater or surface water. Furthermore, there is no evidence that PCBs will have an adverse effect on the "future productive use" of the landfill, or even that the landfill has any "future productive use". The landfill is located in a wetland and over an aquifer. Even if remedial action were taken, it probably would have to consist of capping the landfill, since removal of the PCBs would only move the problem, if any, closer to the surface somewhere else. In view of the fact that no evidence exists to show that PCBs from the landfill constitute a groundwater problem, physical disruption of the site may have a more detrimental effect than a no action alternative.

15. Section 2.3.3

There is little, if any, evidence that Sullivan's Ledge presents or may present a risk to health or the environment. The single stream sediment level reported is well below established EPA levels of concern and the air levels apparently are neither immediately threatening nor causing the ambient air levels elsewhere to be of concern. For these reasons and the fact that Sullivan's Ledge is not mentioned in either the NCP listing or the Hazard Assessment that supports the listing, it is inappropriate to expend Superfund monies at this location. In addition, it is not proper to label the potential needs and objectives for Sullivan's ledge as identical to those for the Landfill, as there is no indication that an artesian aquifer is present under the ledge.

16. Section 2.3.4

This section, which concerns the New Bedford sewer system, raises a number of issues. One relates to the significance of the relatively low levels of contamination that have been reported. The lobster levels decrease as one moves from Area 2 past the treatment plant outfall into Area 3 and beyond. Although EPA determined that secondary treatment is required at this plant under the federal Clean Water Act, this requirement is not being imposed because of PCB's. Secondary treatment should, however, substantially reduce, if not eliminate PCB discharges from the

plant. In addition, the reported sludge levels were less than 1 ppb, while the EPA regulatory threshold is over 50,000 times higher, at 50 ppm. Moreover, the mass flow calculation discussed in the RAMP is not consistent with the City's report to the Acushnet River Estuary Commission, where the value given for the plant's PCB discharge was less than half the calculated amount.

Several points must be raised with respect to contamination of the sewer pipes. First, CDE's barrels of pipe flushings have been properly disposed of (also, the figures given relate to single, unchecked analyses performed on samples from only a few of these barrels, not all 50 of them). Second, the levels in the system must be considered in light of how much is actually going into the Harbor through the treatment plant. As noted, this amount is small and will be reduced with secondary treatment. As already pointed out, the levels of PCBs in the sewage sludge are well below 50 ppm, and the sludge can thus be burned or disposed of without regulation. Finally, if there were a problem, it would be addressed as part of the secondary treatment program.

17. Section 2.3.5

It is not clear why ambient air requires further study. The reported data suggest that there is no problem. As noted above, the Sullivan's Ledge number does not seem "significant" either as an immediate threat or as a cause of worrisome ambient levels elsewhere. In any event, no benchmark for significance or basis

for using it is given. Accordingly, it would not be prudent or consistent with the NCP to spend time and money confirming these results, since they compare well with previous ones and with reasonable expectations based on the absence of PCBs presently exposed to the ambient air. Further, any such studies should assess year-round levels, not seasonal or climatic "spikes."

18. Section 2.3.6

This section proposes an open-ended investigation of as yet unknown sites without any data showing any risk or any connection to the Harbor which is the Superfund site. This diffusion of effort is thus unwarranted and not permitted by the NCP.

19. Section 2.4

It would appear to be misleading to call these efforts "feasibility" studies. As the RAMP attests, the available data are insufficient to permit assessment of either the means or the ends of dredging, and these studies, one of which is only a draft, are at best tentative conceptual treatments of the subject. Thus, they cannot address the potentially serious problems of environmental disruption and resuspension of contaminants with specific reference to the Harbor. Further, they must assume nearby, available land disposal, when none in fact appears likely to be available. This could result in a substantial underestimate of the costs of dredging.

Moreover, even if an environmentally sound disposal site could be found, Massachusetts laws preclude siting of landfills over actual or potential drinking water sources and, at a minimum, would delay landfill siting for many months or years. In addition, no mention is made of the need to study in situ treatment, a remedial alternative with great public support. Most importantly, the studies are unable to do anything more than speculate about the benefits, if any, to be achieved in New Bedford if dredging is carried out. Thus, they could not provide a basis for undertaking dredging even if the cost estimates were correct. Rather, these studies illustrate the enormity of the problem and the inappropriateness of the "fast-track" approach.

20. Section 3.1

The project work statements provided in this section do not present a "strategy". When viewed in the most favorable light, they merely suggest tactics assembled without the aid of a practicable guiding principle. For example, as explained above, statements 001 (ambient air testing), 002 (sewer system testing), 003 (groundwater testing), and 004 (sediment testing in "Acushnet River Estuary/New Bedford Harbor/Buzzards Bay") appear to be unnecessary, unfocused and/or inconsistent with the Superfund site listing, Hazard Assessment and remedial action criteria. Statement 008 (environmental "pathways" study) should be given first priority and targeted on PCBs. Yet, this study would not be "fast-tracked" and would be spread out to cover "PCBs, metals,

and other contaminants in the estuary/harbor/bay". Statements 009 (feasibility study) and 010 (disposal site search), on the other hand, cannot (and need not) properly be done without the guidance of results obtained from the pathways study. Furthermore, a search for nearby disposal sites may well be quixotic if the Massachusetts siting laws are applicable.

21. Sections 3.2 and 3.3

As noted earlier, the scheduling proposed in these sections is fatally defective because it puts the cart before the horse. Environmental and health risks must be assessed first. Their costs and the benefits to be expected from abatement can then be assessed along with a determination of what responses, if any, are necessary and feasible. Further, the cost "summary" given on pages 34 and 35 omits the total cost--up to \$3.3 million. This points to a related problem with the RAMP. It seems to imagine that open-ended, indiscriminate studies can be carried out regardless of the proliferating costs and the diffusion of the resources available for action.

22. Section 4.2

This section on regulatory requirements omits a major problem and potential conflict between state and federal law over the disposal of PCB wastes produced by remedial activities.

Federal law governs PCB disposal. Massachusetts law, however requires a lengthy siting process which no one has yet been able to get through and which imposes strict limits on landfills.

23. Section 4.7

The point suggested by this section is fundamental: the choice of remedial actions must be guided by an identification of the public health goals sought to be achieved. A necessary corollary of this point is that the identification of such goals in turn requires a careful identification of the health risks, if any, and their causes. These points should not be made in passing on the last page. Instead, they should be made clearly at the outset of the RAMP and should guide its scope and organization.

B. RAMP References

1. Kolek Report

This report suggests that only PCB levels in lobsters are of concern, other species having PCB levels well below the FDA 5 ppm tolerance and/or being of no commercial interest. Furthermore, it suggested that the levels in lobsters were decreasing markedly over time, such that only samples taken in the summer exceeded 5 ppm on average, and these only slightly. Subsequent monitoring has corroborated these results.

2. Weaver Report

This report is plagued by a multitude of factual inaccuracies, misleading statements and unsupported conclusions, particularly with regard to the health and environmental risks of PCBs in general and to the New Bedford area in particular.

C. RAMP Appendices

1. Project Work Statement 004

At page A-8 it is suggested that there are suspected PCB "hot spots" in Buzzards Bay, and that these include a "400-acre area in Buzzards Bay near the Cornell-Dubilier plant" and a "400-acre area surrounding the New Bedford sewage treatment plant outfall". There is no evidence that these areas are really "hot spots" (with measured PCB levels below, usually well below, 50 ppm), let alone 400 acre ones. In addition, these areas are in the Outer Harbor, not in Buzzards Bay.

2. Project Work Statement 005

As explained above, there is no reason to suspect adverse environmental impacts at the New Bedford landfill. The existing test results show no evidence of significant releases, any industrial PCB wastes being buried under many feet of municipal refuse. Furthermore, PCBs are known to be virtually immobile in

such situations. In addition, contrary to the RAMP's suggestion, under Massachusetts law, the landfill cannot legally be used for contaminated dredge spoils: the RAMP states that the Landfill is located over the Dartmouth drinking water aquifer (at page 20), and Massachusetts law now prohibits landfilling such wastes in areas overlying such aquifers (Mass. G.L. c. 21C, § 7).

3. Project Work Statement 008

As explained above, this "pathways" study is, together with a health effects study, the most important of those discussed in the RAMP. Unfortunately, the RAMP does not give it its appropriate, architectonic role. Further, it is so broadly defined that carrying it out could easily become an unmanageable task, requiring years of effort and millions of dollars to produce a report, if any, of largely academic interest. Instead, it should be focused on PCBs and lobsters in the Harbor and should be slated for completion at the earliest possible date.

4. Project Work Statement 009

The scope of this feasibility study is far too diffuse and is directed at many sites which are not eligible for the National Priorities List and for which there is no, or only a highly speculative, basis for concern. If its scope is not focused more carefully, this study could be both unmanageable and unending.

Instead, more careful attention should be given to the benefits and effectiveness associated with such a study. .

In addition, the "no action" alternative does not mean "abandonment" of the PCB problem. Such an approach could include ongoing assessment and resource management (e.g., seasonal harvesting of lobsters, barriers to their migration and facilities to reduce PCB concentrations by means of depuration). This approach could well be chosen if it is determined that resource management, together with such natural processes as sedimentation, are superior to human intervention. Indeed, this was the option of choice in the case of the James River, also an estuarine system in which the main impact was on commercial fishing and where there were very high levels of the highly toxic pesticide, Kepone. Similarly, in the case of the DDT contamination of a Tennessee River tributary in Huntsville, Alabama, an important part of the remedial solution was to restrict the migration of fish into and out of the most highly contaminated areas rather than to remove the river bottom by dredging.

Thus the "expectation" that Inner Harbor sediment will be dredged and landfilled is premature. The feasibility, effects and costs of both dredging and landfilling are largely, if not wholly, unknown, as are those of the alternatives. The RAMP should not encourage an insufficiently examined, predetermined

trend toward a decision to dredge. Instead, all options should be evaluated on the basis of good science and engineering.

5. Project Work Statement 010

The disposal site investigations proposed in this work statement face a number of the legal and engineering difficulties discussed above. Accordingly, it seems virtually impossible to complete the proposed tasks in the six months allocated to finding "hot spot" disposal sites, if at all.

6. Project Work Statement 011

Under Massachusetts law, the siting of hazardous waste storage, treatment and disposal facilities is the responsibility of a complex group of state and local authorities, including not merely local boards of health, but also the DEQE, the Department of Environmental Management, the Site Safety Council and "local assessment committees". In the two and one half years since the Massachusetts Siting Act was enacted, not a single proposed facility has progressed past the initial phase of the siting process, let alone survived the difficult siting agreement negotiation and permitting phases.